

1. (Currently amended): Moulding method, carried out by a mould for a conventional injection press, suitable for cost-effectively realizing a piece in one or more injectable materials, said mould comprising a mobile part, fixed to a mobile side of said press, and a fixed part, fixed to a fixed side of said press, on said mobile and fixed parts being realised respective impressions, in various number and configuration, which define, when said mobile part is closed against said fixed part, recesses suitable for receiving said injectable materials in at least two successive injection steps, characterized in that it comprises the following steps:

- a displacement step of ~~housing~~ a sliding element provided with impressions and disposed between said fixed part and said mobile part in a first position relatively respect to said fixed and mobile parts at least a first of said recess;

- a defining step of a first recess by coupling said fixed and said mobile parts with said sliding element and at least an external rested movable insert, wherein the first recess is defined at least by:

- a portion of the surface of the sliding element; and

- a portion of the surface of the insert;

- a first injection step in said first recess, after which a first moulded part of said piece remains fixed on a surface integral to said sliding element;

- an opening step of said at least a movable insert which formed said first recesses;

- a further displacement step of said first part of this piece in a second position ~~recess~~, through translating movement of said sliding element with respect to said fixed part of the mould;

- a defining step of a second recess by coupling said fixed and mobile parts with

said sliding element and said first moulded part, wherein the second recess is defined at least by

- _____ - a portion of the surface of the sliding element; and
- _____ - a portion of the surface of said fixed and/or mobile parts;
- _____ - a second injection step in said second recess.

2. (Currently amended): Moulding method according to claim 1, characterized in that said ~~integral~~ surface integral to said sliding element is an outer surface of said sliding element.

3. (Currently amended): Moulding method according to claim 1, characterized in that said ~~integral~~ surface integral to said sliding element comprises an insert.

4. (Currently amended): Moulding method according to claim 1, characterized in that it comprises steps for carrying out various operations complementary to the moulding operation, ~~such as inserting, labeling, tampography or other.~~

5. (Original): Moulding method according to claim 1, characterized in that it comprises further injection steps in further recesses.

6. (Withdrawn) Mould (10; 110; 210; 310; 410; 510; 610; 710; 810; 910; 1010; 1110; 1210; 1310; 1410; 1510; 1610; 1610b; 1610c; 1710; 1810; 1910; 2010) for a conventional injection press, suitable for cost-effectively realizing a piece in one or more injectable materials, of the type comprising a mobile part (14; 114; 214; 314; 414; 514; 614; 714; 814; 914; 1014; 1114; 1214; 1314; 1414; 1514; 1614; 1614b; 1614c; 1714; 1814; 1914; 2014), fixed to a mobile side of said press, and a fixed part (12; 112; 212; 312; 412; 512; 612; 712; 812; 912; 1012; 1112; 1212; 1312; 1412; 1512; 1612; 1612b; 1612c; 1712; 1812; 1912; 2012), fixed to a fixed side of said press, on said mobile (14; 114; 214; 314; 414; 514; 614; 714; 814; 914; 1014; 1114; 1214; 1314; 1414; 1514; 1614; 1614b; 1614c; 1714; 1814; 1914; 2014) and fixed (12; 112; 212; 312; 412;

512; 612; 712; 812; 912; 1012; 1112; 1212; 1312; 1412; 1512; 1612; 1612b; 1612c; 1712; 1812; 1912; 2012) parts being realized respective impressions, in various number and configuration, which define, when said mobile part is closed against said fixed part, recesses (16, 18; 116, 118; 216, 218; 316, 318; 416, 417, 418; 516, 518; 616, 618; 716, 718; 816, 818; 916, 918; 1016, 1018, 1019; 1116, 1118; 1216, 1218; 1316, 1318; 1416, 1418; 1516, 1518; 1616, 1618; 1616b, 1618b; 1616c, 1618c; 1716, 1718; 1816, 1818; 1916, 1918; 2016, 2018) suitable for receiving said injectable materials in at least two successive injection steps, characterized in that at least a first of said recesses (16; 116; 216; 316; 416; 516; 616; 716; 816; 916; 1016; 1116; 1216; 1316; 1416; 1516; 1616; 1616b; 1616c; 1716; 1816; 1916; 2016), where a first injection step takes place, comprises a sliding element (20; 120; 220; 320; 420; 520; 620; 720; 820; 920; 1020; 1120; 1220; 1320; 1420; 1520; 1620; 1620b; 1620c; 1720; 1820; 1920; 2020), on a surface integral with said sliding element a first part (56; 156; 256; 356; 456; 556; 656; 756; 856; 956; 1056; 1156; 1256; 1356; 1456; 1556; 1656; 1756; 1856; 1956; 2056) of said piece remaining fixed, said first part (56; 156; 256; 356; 456; 556; 656; 756; 856; 956; 1056; 1156; 1256; 1356; 1456; 1556; 1656; 1756; 1856; 1956; 2056) of said piece being successively carried by said sliding element (20; 120; 220; 320; 420; 520; 620; 720; 820; 920; 1020; 1120; 1220; 1320; 1420; 1520; 1620; 1620b; 1620c; 1720; 1820; 1920; 2020), equipped with translating movement with respect to said fixed part of said mould, in a second of said recesses (18; 118; 218; 318; 418; 518; 618; 718; 818; 918; 1018; 1118; 1218; 1318; 1418; 1518;

1618; 1718; 1818; 1918; 2018), where a second injection step takes place.

7. (Withdrawn) Mould (10) according to claim 6, characterized in that said recesses (16, 18) are four in number, in that said elements (20) are two in number and are equipped with translating movement along an axis substantially perpendicular to a longitudinal axis of the mould (10).

8. (Withdrawn) Mould (10) according to claim 7, characterized in that it realizes a piece such as a sleeve with inner gaskets, said first parts (56) of finished piece, formed in said first recesses

Examiner: KRAMER, Devon C

(16), being said gaskets, said first recesses (16) being defined by an outer support of inserts (22) on said sliding elements (20).

9. (Withdrawn): Mould (10) according to claim 8, characterized in that said gaskets are in thermoplastic elastomer.

10. (Currently amended): Moulding method carried out by a mould (10) according to claim [[9]]
1, characterized in that is comprises the following steps:

- A first injection step of an injectable materials in said first recess (16), to realize inner gaskets;
- a cooling step of said injected material;
- a step of opening said mould (10);
- a removal step of feedheads with extractors and an opening step of said movable inserts (22) which formed said first recesses (16);
- a re-entry step of said extractors and displacement step of said sliding elements (20), to define said second recess (18);
- a second injection step of an injectable material in said second recess (18), which takes place after having previously closed said mould (10);
- a cooling step of said material injected into said second recess (18);
- a step of opening said mould (10);
- a displacement of said sliding elements (2) to return to an initial position;
- removal of feedheads and of said finished piece;
- an advancing step of said movable inserts (22) and of sliding back of said extractors;
- a closing step of said mould (1), which coincides with a start of cycle step.

11. (Currently amended): Method according to claim 10, characterized in that said sliding elements (20) are mounted on sliding trolleys, wherein said trolleys slide back slipping off said sliding elements (20) from said gaskets.

12. (Withdrawn) Mould (110) according to claim 6, characterized in that it realizes a piece such as a sleeve with six inlets.

13. (Withdrawn) Mould (210) according to claim 6, characterized in that it realizes a body equipped with an inner gasket similar to a sealed container.

14. (Withdrawn) Mould (310) according to claim 6, characterized in that it realises a sleeve in series, able to be realised in very small sizes and similar to an aid to sealably join tubes or electrical wires.

15. (Withdrawn) Mould (410) according to claim 6, characterised in that it realises a sleeve in five parts, of said sleeve being firstly, in a first semi-cycle, moulded gaskets in first recesses (416) and a central part in further recesses (417), in the subsequent semi-cycle said central parts being conveyed through a guided insert (421), where said further recesses (417) are housed, said insert (421) being connected to a table in a subsequent position near to said second recesses (418).

16. (Withdrawn) Mould (410) according to claim 15, characterized in that on said gaskets, pressed against a central part of said sleeve, parts are overmoulded which stably connect components, the sleeve being kept empty inside.

17. (Withdrawn) Mould (510) according to claim 6, characterized in that it realizes a curved shaped sleeve,

18. (Withdrawn) Mould (610) according to claim 6, characterized in that it realizes a curved sleeve obtained from many overmoulded shots.

19. (Withdrawn) Mould (710) according to claim 6, characterized in that it realizes a flat surface equipped with side gaskets, in a first step perimetric pieces being moulded and in a second step said flat surface being moulded.
20. (Withdrawn) Mould (810) according to claim 6, characterized in that it realizes a flat surface having a framed box-shaped structure.
21. (Withdrawn) Mould (810) according to claim 20, characterized in that perimetric parts of said flat surface have a complex shape and a non-constant section.
22. (Withdrawn) Mould (910) according to claim 6, characterized in that it realizes a distributor equipped with relative gaskets.
23. (Withdrawn) Mould (1010) according to claim 6, characterized in that it realizes an eyeglass frame complete with arms and relative hinges with elastic joints, said sliding element (1020) taking up three different positions to realize in succession said first recess (1016), a further recess (1019) and said second recess (1018).
24. (Withdrawn) Mould (1010) according to claim 23, characterized in that it also actuates an injection step to realise lenses.
25. (Withdrawn) Mould (1010) according to claim 24, characterized in that said lenses are made from poly(methyl metacrylate) PMMA.
26. (Withdrawn) Mould (1110) according to claim 6, characterized in that it realizes a valved cap, wherein a support serves as a base for a patella which acts as a valve, a trolley which conveys a first shot inside said second recess (1118) follows a non-linear movement so as to avoid collisions with walls of said recess (1118).

27. (Withdrawn) Mould (1210) according to claim 6, characterized in that it realizes a body with inner and outer gaskets of complex composition, wherein said sliding elements (1220), on which gaskets are moulded in a first semi-cycle, interpenetrate to be arranged for a second injection step, a replacement of recesses being ensured by a lowering of a descending core on which trolleys close.

28. (Withdrawn) Mould (1210) according to claim 27, characterized in that a trolley is moved by a column and a removal of a finished piece is ensured by stopping in telescope sequence, a second trolley being moved by a tilted column where a jack takes care of a displacement for a change of stroke.

29. (Withdrawn) Mould (1310) according to claim 6 or 27, characterised in that a positioning of an axis of a piece is parallel to an axis of the press.

30. (Withdrawn) Mould (1410) according to claim 6, characterized in that it realizes a kinematism, using non-chemically adhesive materials, said sliding elements (1420) alternatively displacing horizontally and vertically.

31. (Withdrawn) Mould (1510) according to claim 6, characterized in that said sliding element (1520) comprises an impression part (1516, 1518), so that said impression (1516, 1518) translates following one or more stages.

32. (Withdrawn) Mould (1510) according to claim 31, characterized in that for each of said stages an injection step or a different operation like labelling or other takes place.

33. (Withdrawn) Mould (1510) according to claim 31, characterized in that it realizes a three-layer beaker.

34. (Withdrawn) Mould (1610) according to claim 31, characterized in that it is balanced and translating with two growing stages of a finished product.

35. (Withdrawn) Mould (1610) according to claim 34, characterized in that said fixed part (1612) includes eight identical dies in sets of four of which those for injection occupy a central part of said mould (1610), said mobile part (1614) comprising four of said sliding elements (1620).

36. (Withdrawn) Mould (1610) according to claim 35, characterized in that said sliding elements (1620) comprise translating punchers in pairs so as to converge or diverge simultaneously during an opening between two semi-cycles.

37. (Withdrawn) Mould (1610) according to claim 36, characterized in that in a first semi-cycle, with said punchers (1620) apart, a body of a beaker is moulded injecting a first material in four corresponding dies, in a second semi-cycle, after having moved together said punchers (1620), a rubber material is overmoulded on top.

38. (Withdrawn) Mould (1610) according to claim 37, characterized in that, after having opened said mould (1610) and removed said four finished pieces, the four punchers (1620) once again displace in a position distanced from each other to successively restart with an initial step.

39. (Withdrawn) Mould (1610b; 1610c) according to claim 34, characterized in that it is of the so-called "stack" type, formed from three or more moulding planes.

40. (Withdrawn) Mould (1610b) according to claim 39, characterized in that it has a central moulding plane equipped with dies.

41. (Withdrawn) Mould (1610c) according to claim 39, characterized in that it has a central moulding plane equipped with punchers.

42. (Withdrawn) Mould (1710) according to claim 31, characterized in that it realizes a body of a toothbrush.

43. (Withdrawn) Mould (1710) according to claim 42, characterized in that it is equipped with a double table device which follows an impression which in turn translates on a guide connected to a first table.

44. (Withdrawn) Mould (1710) according to claim 43, characterized in that a screw is used actuated by a motor.

45. (Withdrawn) Mould (1810) according to claim 31, characterized in that said translation takes place between elements.

46. (Withdrawn) Mould (1910) according to claim 31, characterized in that impression translate linked to trolleys.

47. (Withdrawn) Mould (2010) according to claim 31, characterized in that elements remain connected to said fixed part (2012) of said mould (2010).